



Introduction to QoS Features for Voice

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This module provides a high-level introduction to the Cisco IOS quality of service (QoS) features related to handling voice traffic.

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Information About QoS Features for Voice

This section contains the following concepts related to QoS features for voice:

- [Characteristics of Voice Applications, page 1](#)
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Characteristics of Voice Applications

Real-time applications such as voice applications have different characteristics and requirements from those of traditional data applications. Because they are real-time-based, voice applications tolerate minimal variation in the amount of delay affecting delivery of their voice packets. Voice traffic is also intolerant of packet loss and jitter, both of which degrade unacceptably the quality of the voice



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transmission delivered to the recipient end user. To effectively transport voice traffic over IP, mechanisms are required that ensure reliable delivery of voice packets. Cisco IOS QoS features collectively embody these techniques, offering the means to provide priority service that meets the stringent requirements of voice packet delivery.

QoS and Voice Feature Sets

Cisco IOS software includes a rich set of features that enable you to deploy mechanisms that deliver QoS throughout your network.

Cisco IOS QoS for voice features are best deployed at different points in the network and are designed to be used in conjunction with other QoS features to achieve specific goals such as control over jitter and delay. Not all QoS for voice features are supported on all platforms.

The following are a few of the Cisco IOS features that address the requirements of end-to-end QoS and service differentiation for voice packet delivery:

- **Frame Relay Traffic Shaping (FRTS)**—Delays excess traffic using a buffer, or queueing mechanism, to hold packets and shape the flow when the data rate of the source is higher than expected.
- **FRF.20 (and Higher)**—Ensures predictability for voice traffic, aiming to provide better throughput on low-speed Frame Relay links by interleaving delay-sensitive voice traffic on one virtual circuit (VC) with fragments of a long frame on another VC utilizing the same interface.
- **IP RTP Priority and Frame Relay IP RTP Priority**—Provides a strict priority queueing scheme that allows delay-sensitive data such as voice to be dequeued and sent before packets in other queues are dequeued. These features are especially useful on slow-speed WAN links, including Frame Relay, Multilink PPP (MLP), and T1 ATM links. It works with weighted fair queueing (WFQ) and Class-Based WFQ (CBWFQ).
- **IP to ATM Class of Service (CoS)**—Includes a feature suite that maps QoS characteristics between IP and ATM. Offers differential service classes across the entire WAN, not just the routed portion. Gives mission-critical applications exceptional service during periods of high network usage and congestion.
- **Low Latency Queueing (LLQ)**—Provides strict priority queueing on ATM VCs and serial interfaces. This feature allows you to configure the priority status for a class within CBWFQ and is not limited to User Datagram Protocol (UDP) port numbers, as is IP RTP Priority.
- **Multilink PPP (MLP)**—Allows large packets to be multilink-encapsulated and fragmented so that they are small enough to satisfy the delay requirements of real-time traffic. MLP also provides a special transmit queue for the smaller, delay-sensitive packets, enabling them to be sent earlier than other flows.

Where to Go Next

Decide which of the QoS feature for voice you want to use in your network and see the corresponding module. For more details, see the [“Related Documents”](#) section below.

Additional References

The following sections provide references related to QoS features for voice traffic.

Related Documents

Related Topic	Document Title
FRTS	“MQC-Based Frame Relay Traffic Shaping” module
FRF.20 support	“FRF.20 Support” module
IP RTP Priority and Frame Relay IP RTP Priority	“Configuring Weighted Fair Queueing” module
IP to ATM CoS	“Configuring IP to ATM Class of Service” module
LLQ	“Configuring Weighted Fair Queueing” module

Technical Assistance

Description	Link
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